

Wildlife Express

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SCORPIONS

Scorpion Photo: CC-BY Lon&Queta at Flickr.com

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FASCINATING SCORPIONS



Scorpion Photo: CC-BY Mark Leppin at Flickr.com

Scorpions live in Idaho! What comes to your mind when you hear the word scorpion? Does it make your hair stand up in fear? Do you shout, “Cool!?” Could you take them or leave them? Some people may think that scorpions look creepy or scary, or they think they are dangerous. Perhaps these feelings are because we seldom see scorpions and don’t understand them. Most live in burrows and other nooks and crannies. They are also nocturnal or most active at night. Let’s learn a bit more about scorpions and find out if they truly deserve a negative reputation.

Scorpions are arachnids (uh-rak-nids). They are in the same group as spiders, ticks and mites. They don’t have internal bones. They have exoskeletons that are similar to fingernails. Exoskeletons are strong and flexible, but they do not expand as scorpions grow. They grow larger

exoskeletons and shed their smaller ones when they become too small. Scorpions live in some dry, hot places. To help prevent their bodies from drying out, their exoskeletons are covered in wax.

All arachnids have two main body parts, the head and the abdomen. In scorpions, the head part is called the prosoma or cephalothorax (sef-a-low-thor-ax). It contains the big claws, mouthparts, eyes and legs. Yes, you read that correctly. Scorpions have four pairs of walking legs on their heads! Their legs have small claws on the end that give them amazing gripping ability. They can scurry across almost any surface, including walls!

What people often notice first about scorpions are their limbs with large claws. These limbs are not legs; they are called pedipalps (ped-

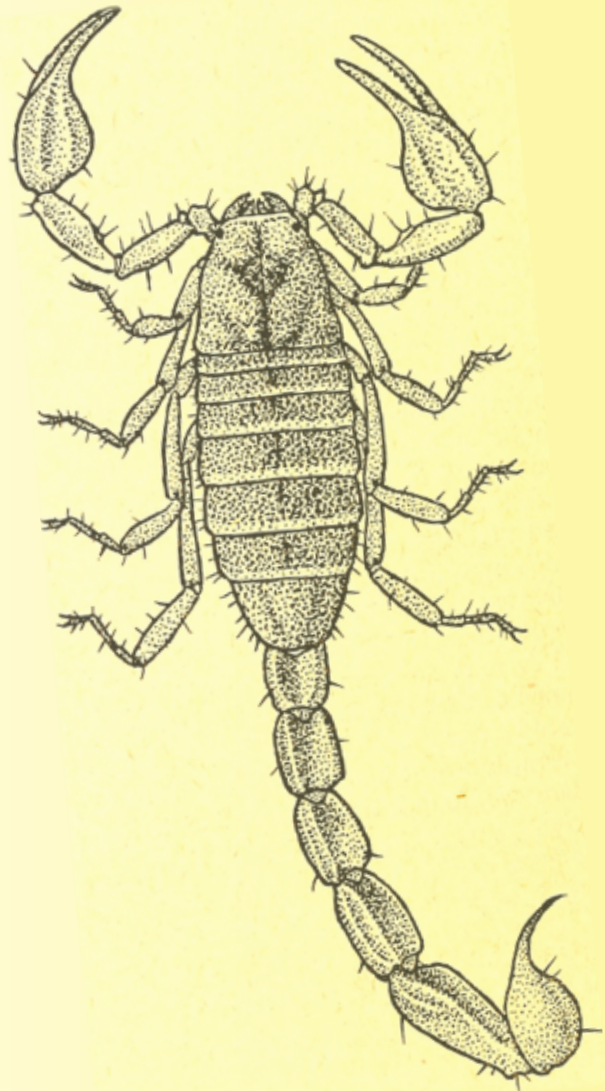
uh-palps). The claws or pincers are used for grabbing food, for fighting off enemies and for mating.

Scorpions eat mostly insects, spiders and other small creatures. Many scorpions are ambush predators. They wait in their burrow for an unsuspecting insect to pass by, then quickly dart out of their shelter to grab their prey. They may or may not need to sting their prey to subdue it. The pedipalps pull the food into the scorpions' mouthparts. Their mouthparts are very sharp and can tear the prey into small pieces. These little pieces are put in a cavity that contains digestive juices that turn the prey into a liquid. The liquid food is then sucked into the gut. It takes a long time to use up the energy from one meal. Scorpions may survive up to six to 12 months on one meal!

Scorpions have six to 12 eyes! The exact number depends on the type of scorpion. Two eyes are located on the top of their heads. Two to five eyes are found along each side of the head at the front corners. Scorpions can't see details of images, but they can see at night. They have some of the most light-sensitive eyes of any animal.

Since their sight isn't the best, scorpions have hairs on their bodies that help them sense vibrations to pick up the movements of prey and predators. Some scorpions can even rub their hairs together to make a sound. The sound warns predators to stay away.

Behind the head is the abdomen. It is called the mesosoma. This is where scorpions breathe. They do not have noses and lungs. Instead, they have small holes on their abdomens called spiracles. Air enters and leaves the body through these holes. In the body, air travels through tubes to four pairs of book lungs. Book lungs look like an open book. Layers of tissue, like pages in a book, are stacked on top of each other. The layers are filled with fluid that is similar to blood.



People also seem to notice scorpions' tails. It's hard not to miss curved tails with impressive stingers! The tail of a scorpion is called the metasoma. It contains the stinger and venom glands. Scorpions inject venom into prey to stop them from escaping. They may also sting something as a form of defense if they feel threatened.

Even with claws and a stinger, there are scorpion predators. Lizards, coyotes and grasshopper mice eat scorpions. We even have bats in Idaho that prey on scorpions. Pallid bats are immune to scorpion stings!

Some people may have negative feelings about scorpions, but there is no denying they are intriguing animals! Their unique looks and behaviors help them survive in areas where other animals may struggle to live.

IDAHO SCORPIONS

We have four species, or kinds, of scorpions that live in Idaho. Most of Idaho's scorpions are found in the southern deserts, but the northern scorpion has been seen living in Idaho's panhandle. Here are some details about the scorpions found in Idaho.

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NORTHERN SCORPION



- Most widespread scorpion in Idaho
- Found in the Idaho panhandle, along Idaho's western border and all across southern Idaho
- Can tolerate cold better than other scorpions
- Adults are up to two inches in length
- Body usually brown with a light-colored line at the end of each body segment
- Yellowish-brown tail, legs and pincers
- Stinger light-yellow and bigger than the rest of the tail
- Not active in temperatures below 50°
- Gives birth in July and August to about 24 babies, but may have as many as 45

BURROWING SCORPION

- Body may be slightly darker than legs, pedipalps and tail
- Large claws have dark tips
- Tail segments all about the same size with large-looking stinger
- Females burrow deep in ground and rarely leave burrow
- Most active in August

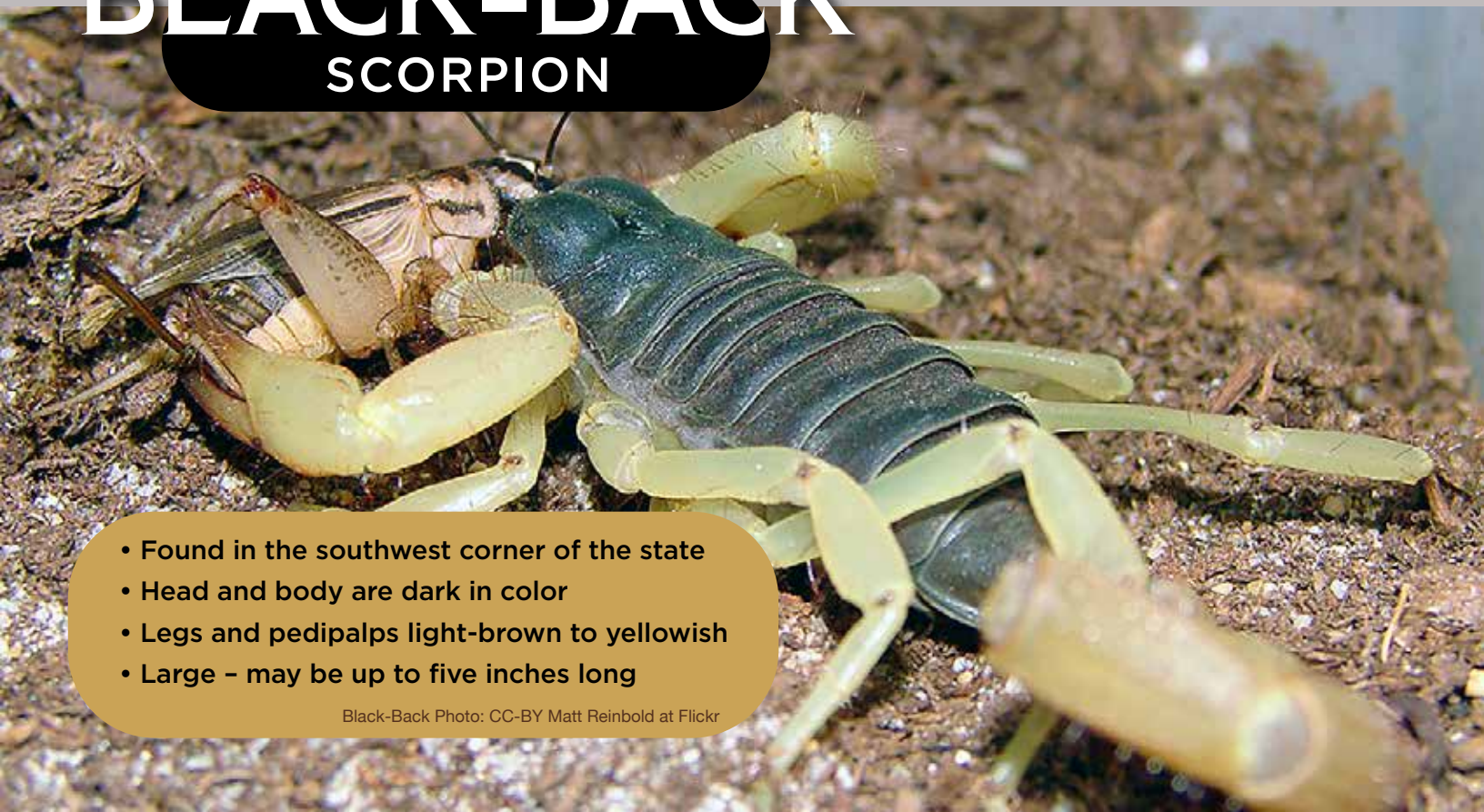


Burrowing Scorpion Photo: BY-NC-SA Arie Vander Meijden

BLACK-BACK SCORPION

- Found in the southwest corner of the state
- Head and body are dark in color
- Legs and pedipalps light-brown to yellowish
- Large - may be up to five inches long

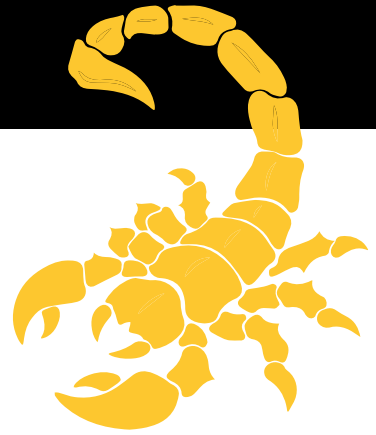
Black-Back Photo: CC-BY Matt Reinbold at Flickr



YELLOW GROUND

SCORPION

- Found mostly in the extreme southwest corner of Idaho
- Color is light-buff to yellow
- Pincers have enlarged bases and narrow longer-looking ends
- Tail looks wider and bulkier compared with pedipalps
- First two tail segments closest to body are as wide as they are long
- Adults less than three inches in length; average about two and one-half inches long
- Usually found in sandy soils and under surface objects where they dig a short burrow or “scrape”





COURTSHIP DANCING AND BABY PIGGYBACK RIDES

Scorpion courtship is something to watch! It may involve dancing, clubbing, kissing and even a few headstands!

Scorpion courtship begins when the female releases a scent to attract males. Every type of scorpion has its own special smell, so she doesn't have to worry about attracting a different kind of male that might harm her.

When a male locates a female, he gets her attention by doing something called "juddering." He moves his body quickly back and forth without moving his legs. He looks almost like he is shivering. This movement sends vibrations through the ground and lets the female know he is there.

If the female likes what she senses, she will allow the male to approach her and "clubbing" may happen. They strike at each other with their tails but don't sting each other.

After clubbing, the male grabs the female by the pincers, and they rub mouthparts in a sort of kiss. Then the dancing starts. With their pincers joined, the male leads the female in a complex back and forth shuffle. The female may even do a few headstands for style points! Their dance may last a few minutes to a few hours. When the time is right, the male deposits a spermatophore (sper-mat-uh-for) on the ground. It is a small ball that contains sperm to fertilize her eggs. The male guides the female over the small ball, and it is pulled into her body. The male lets go of the female's pincers and runs quickly away before she decides he might be lunch.



Baby scorpions develop inside the mother. This may take anywhere from a few months up to a year. It all depends on the type of scorpion.

Newborn scorpions look like mini, white versions of the adults but without stingers or large pincers. They will get these after their first molt. Their exoskeletons are also soft, so they crawl up onto the mother's back for protection. The babies have little suction cups on their feet to help them hang on during their piggyback ride. The babies don't leave the mother's back until they shed their exoskeletons at least once. This shed exoskeleton will be their first meal!

Depending on the type of scorpion, the young may shed their exoskeletons two to six times. Each time their exoskeletons become harder and darker. They may leave the mother's back occasionally to explore and jump back on when they sense danger. Once the exoskeleton is fully hardened, they can hunt on their own. They give up their piggyback ride and become independent.

OUCH

VENOM HURTS

Yellow Ground Scorpion Photo: BY-NC-SA 3.0 Royal Tyler | Wasp Photo: CC-BY Brian Jobson at Flickr.com

Many animals use venom for protection or as a way to capture prey. Scorpions, ants, bees, and snakes are just some of the animals that may use venom. Venoms are chemicals that have toxic effects in the bodies of other animals.

Scorpion venoms may be used to capture prey or for self-defense. At the end of a scorpion's tail is a rounded bulb. This is called the telson. It contains two venom glands where venom is made and the stinger. Scorpion venoms contain many things, but the most important are neurotoxins (noor-o-tok-sins). Neurotoxins paralyze a victim so they are easier to eat. Some scorpions can squirt a fine mist of venom at an attacker. The spray may travel up to three feet and smells like mustard! If the venom enters the eyes or a cut, it is very painful and may cause other problems. Young scorpions have venom just as potent as the adults! Idaho's scorpions have a mild toxin that is usually not dangerous to humans. If you get stung by a scorpion in Idaho, it will be like a mild bee sting.

If you have ever been stung by a wasp, you have experienced one effect of venom – pain!



Wasps, bees and the Gila monster lizard have venoms that cause sudden and strong pain.

These venoms are used mainly for protection.

Once an animal has experienced the sting of a bee, it usually will think twice before messing with bees again!

Snake venoms are used mainly to capture prey. They will either paralyze muscles or cause bleeding to destroy muscles. Snake venoms also have a bit of a digestive function. They start to break down the prey so it will be easier to eat. Pit vipers, like our rattlesnake, have the most complex venoms of any snakes.

Their venom will paralyze and destroy muscles. Sometimes a snake will bite and not inject venom. Snakes can and do control the amount of venom that is released during a bite.

The best way to avoid being stung or bitten is to observe venomous animals from a distance. When you are outside, watch where you step and put your hands. Remember these animals are usually not aggressive toward humans. Stings and bites usually happen when an animal is scared and trying to protect itself.

Leave them alone and they will be more than happy to leave you alone.



OTHER CREEPY CRAWLERS

You turn over a rock, and something darts quickly away. **What is it?**

You may call the creepy crawler a bug, but most likely it is not a true bug. A bug is actually a type of insect. Bugs are insects that have four wings and sucking mouthparts. Water skippers are examples of true bugs.

The creepy crawler you saw running away was probably an arthropod (ahr-thruh-pod). Arthropods are animals that include scorpions. All arthropods have exoskeletons and jointed legs. The word arthropod means jointed foot.

Arthropods are divided into five main groups:

- **arachnids (uh-rak-nids)**
spiders, ticks, mites, scorpions
- **crustaceans (krus-ta-shens)**
crabs, lobsters, crayfish, shrimps, sowbugs or roly-polys
- **centipedes**
- **millipedes**
- **insects**

This chart will help you figure out which group your creepy crawler is in.

	Arachnids	Crustaceans	Centipedes	Millipedes	Insects
Body Parts	2	2	Many Segments	Many Segments	3
Legs	8	Usually 10	Many, 1 Pair per Segment	Many, Usually 2 Pairs per Segment	6
Antennae	None	2 Pairs	1 Pair	1 Pair	1 Pair
Habitat	Land	Saltwater and Freshwater, Rarely Land	Land	Land	Land and Freshwater Rarely Saltwater



LOOKING FOR SCORPIONS

Staying up late to look for scorpions can be fun! They are so special and unique. Here are some things to consider if your family decides to go looking for scorpions. Good luck with the hunt!

Scorpions will be in dry, desert-like areas. It is easier to see scorpions dashing across the ground in open areas between plants. A great place to look is Bruneau Sand Dunes State Park. Pallid bats also live in the park. If you are lucky, you may even see a pallid bat swoop down and capture a scorpion for dinner!

Scorpions will not be active until it is dark. Wait at least $\frac{1}{2}$ hour after sunset to venture out. 1-2 hours after sunset may be best.

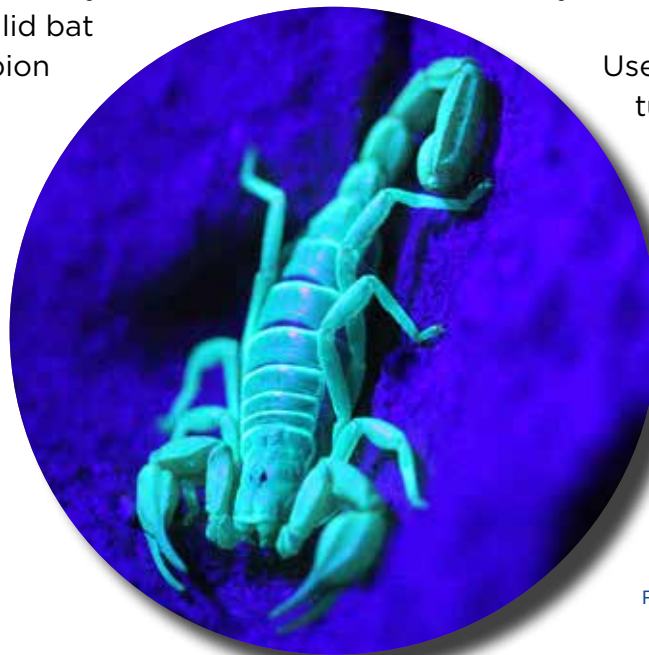
Don't bother looking on a cool night. July and August nights will have the most activity.

Take a black light. Scorpions are fluorescent; they glow a beautiful blue-green under ultraviolet light! Shine the black light over an area and look for the glow.

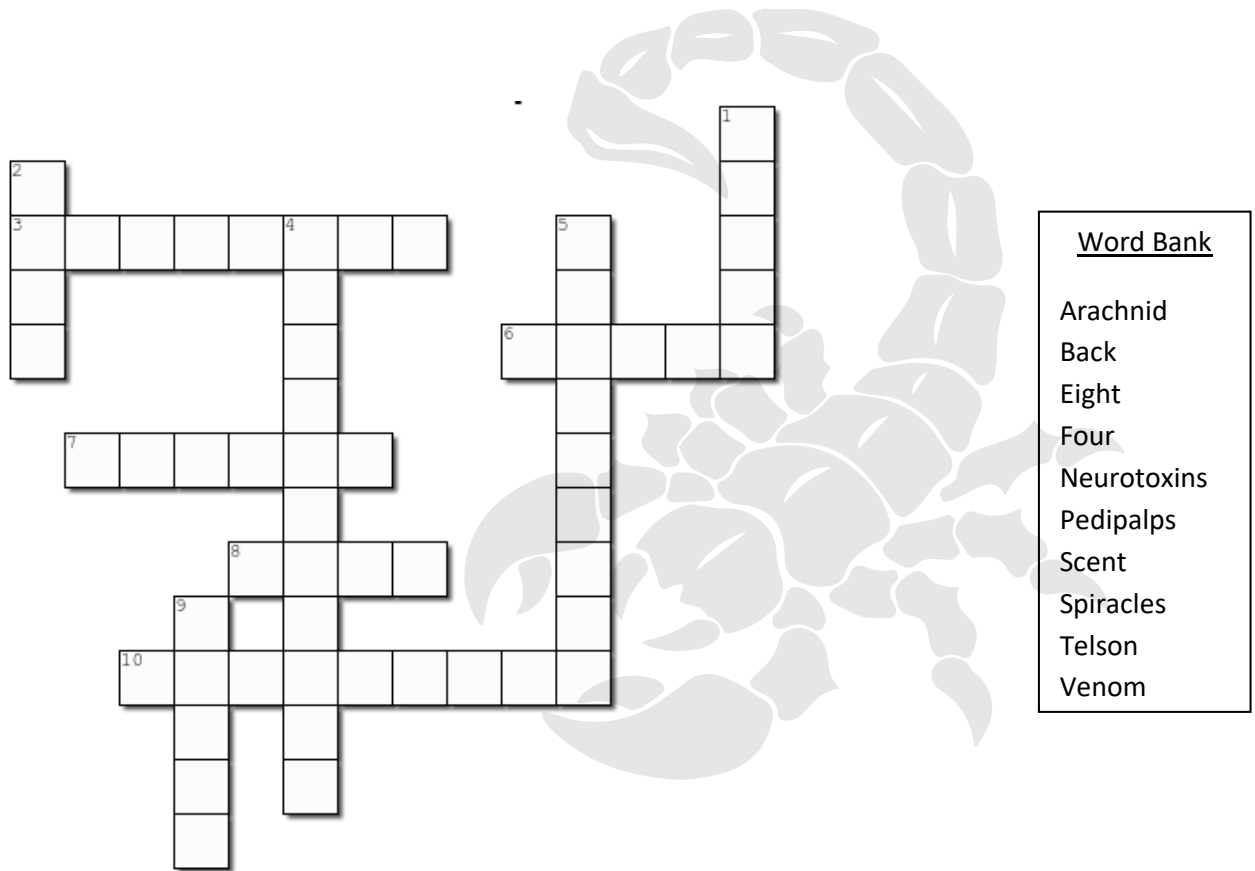
Move slowly with soft footfalls. Scorpions feel vibrations in the ground and will quickly run away if they sense danger.

Don't grab a scorpion! Observe it, don't disturb it. If you do, you might be sorry.

Use a sturdy stick to turn over rocks and other materials. You never know what might be hiding under something.



SENSATIONAL SCORPIONS



Created using the Crossword Maker on TheTeachersCorner.net

Across

3. Scorpions are in this animal group.
6. The number of legs found on a scorpion.
7. This contains two venom glands and a stinger.
8. The number of scorpion species found in Idaho.
10. Large pincers are found on the end of these.

Down

1. Female scorpions release this to attract mates.
2. Newborn scorpions crawl up on their mother's _____ for protection.
4. The most important thing found in scorpion venom.
5. Air enters and leaves a scorpion's body through these.
9. Scorpions use this to stop their prey from escaping.

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WE WOULD LIKE TO HEAR FROM YOU!

If you have a letter, poem or question for Wildlife Express, it may be included in a future issue! Send it to: adare.evans@idfg.idaho.gov or
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